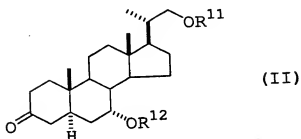
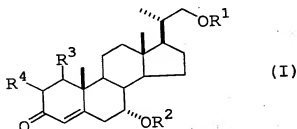


Claims

1. A method for producing a 5 α -pregnane derivative represented by the formula (II):

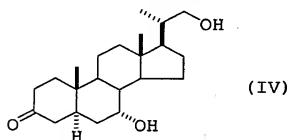


- 5 wherein R¹¹ and R¹² are each independently a hydrogen atom or a hydroxyl-protecting group, which comprises reacting a pregnane derivative represented by the formula (I):



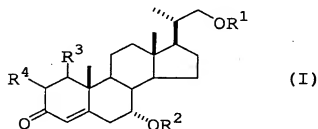
- 10 wherein R¹ is a hydroxyl-protecting group, R² is a hydrogen atom or a hydroxyl-protecting group, and R³ and R⁴ are each a hydrogen atom or in combination form a bond, with a metal selected from alkali metals and alkaline earth metals in the presence of a proton donor and an amine and/or ammonia.
- 15 2. The method of claim 1, wherein R² and R¹² are hydrogen atoms.
3. The method of claim 1 or 2, wherein R³ and R⁴ in combination form a bond.
- 20 4. The method of claim 3, wherein R¹ and R¹¹ are tri-substituted silyl groups having three, same or different, substituents selected from the group consisting of an alkyl group optionally having substituent(s), an aryl group optionally having substituent(s), an alkoxyl group optionally having substituent(s) and an aryloxy group optionally having substituent(s).

5. The method of claim 4, wherein R^1 and R^{11} are tert-butyldimethylsilyl groups.
6. The method of any one of claims 1 to 5, wherein the metal is an alkali metal.
7. The method of claim 6, wherein the alkali metal is lithium.
8. A method for producing (20S)-7 α ,21-dihydroxy-20-methyl-5 α -pregn-3-one represented by the formula (IV):

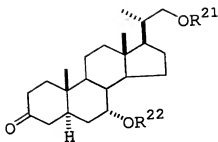


, which comprises the steps of

- (a) reacting a pregnane derivative represented by the formula (I):



- wherein R^1 is a hydroxyl-protecting group, R^2 is a hydrogen atom or a hydroxyl-protecting group, and R^3 and R^4 are each a hydrogen atom or in combination form a bond, with a metal selected from alkali metals and alkaline earth metals in the presence of a proton donor and an amine and/or ammonia to give a 5 α -pregnane derivative represented by the formula (III):



(III)

- wherein R²¹ is a hydroxyl-protecting group and R²² is a hydrogen atom or a hydroxyl-protecting group; and
- (b) eliminating the hydroxyl-protecting group of the 5 α -pregnane derivative represented by the formula (III) obtained by the aforementioned step.
9. The method of claim 8, wherein R² and R²² are hydrogen atoms.
10. The method of claim 8 or 9, wherein R³ and R⁴ in combination form a bond.
11. The method of claim 10, wherein R¹ and R²¹ are tri-substituted silyl groups having three, same or different, substituents selected from the group consisting of an alkyl group optionally having substituent(s), an aryl group optionally having substituent(s), an alkoxyl group optionally having substituent(s) and an aryloxy group optionally having substituent(s).
12. The method of claim 11, wherein R¹ and R²¹ are tert-butyltrimethylsilyl groups.